

**U. S. DEPARTMENT OF ENERGY  
WORK BREAKDOWN STRUCTURE DICTIONARY  
PART II - ELEMENT DEFINITION**

<b>1. PROJECT TITLE/PARTICIPANT</b> Environmental Management/Paducah Remediation Services, LLC (PRS)		<b>2. DATE</b> 06/29/07	<b>3. IDENTIFICATION SITE</b> Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
<b>4. WBS ELEMENT CODE</b> 04.11.10.05		<b>5. WBS ELEMENT TITLE</b> Outyear Surveillance & Maintenance	
<b>6. INDEX LINE NO.</b> N/A	<b>7. REVISION NO. AND AUTHORIZATION</b> Rev 0		<b>8. DATE</b> 06/29/07
<b>9. APPROVED CHANGES</b> N/A			
<b>10. SYSTEM DESIGN DESCRIPTION</b> N/A		<b>11. BUDGET AND REPORTING NUMBER</b> N/A	
<b>12. ELEMENT TASK DESCRIPTION</b>  <b>THIS IS A PLANNING LEVEL WBS DICTIONARY.</b>  <u><b>WBS STRUCTURE</b></u>  <p>The scope of this element includes the following subelements:</p> <ul style="list-style-type: none"> <li>• WBS 04.11.10.05.01 Outyear Surveillance &amp; Maintenance Subproject Management</li> <li>• WBS 04.11.10.05.02 Outyear C-340 Surveillance &amp; Maintenance</li> <li>• WBS 04.11.10.05.03 Outyear Other Facilities Surveillance &amp; Maintenance</li> <li>• WBS 04.11.10.05.04 Outyear Vehicle Maintenance</li> </ul> <u><b>INTRODUCTION</b></u>  <p>Surveillance and Maintenance (SM) activities are performed on many facilities at the Paducah Gaseous Diffusion Plant (PGDP).</p> <ul style="list-style-type: none"> <li>• Surveillance is any activity that involves the scheduled, periodic inspection of a facility, equipment, or structure required by federal and state environmental, safety, and health laws and regulations, and by DOE Orders. The purpose of surveillance is to demonstrate compliance, identify problems requiring corrective action, and determine the facility's present environmental, radiological, and physical condition. More specifically, surveillance includes activities to be performed to determine the operability of critical equipment, monitor radiological conditions, check safety-related items, provide for facility safety controls, and assess facility structural integrity.</li> <li>• Maintenance is any activity performed at the site or facility on a day-to-day basis that is required to sustain property in a condition suitable for the property to be used for its designated purpose and includes preventative, predictive, and corrective (repair) maintenance.</li> </ul> <p>Thus, S&amp;M consists of activities performed at the PGDP that result in the effective management of hazards and that are necessary to maintain safe and secure conditions, while complying with applicable requirements.</p> <u><b>LOGIC RELATIONSHIPS</b></u>  <b>Interfaces</b> <u>Internal to Contractor</u> <ul style="list-style-type: none"> <li>• All Contractor project managers and staff</li> <li>• All subcontractors</li> <li>• Material Disposition group for disposal</li> </ul>			

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<u>External to Contractor</u> <ul style="list-style-type: none"><li>• U.S. Department of Energy (DOE) Paducah Portsmouth Project Office (PPPO) and support contractors</li><li>• DOE Headquarters (HQ) or other DOE Sites (if applicable)</li><li>• Environmental Protection Agency (EPA)</li><li>• Commonwealth of Kentucky (KY)</li><li>• Site tenants including United States Enrichment Corporation (USEC); Uranium Disposition Services, LLC; and Swift &amp; Staley Team (SST)</li><li>• USEC services in the area of property, information technology, radios, etc.</li><li>• SST, particularly in the areas of property management, information technology, and security.</li><li>• Nevada Test Site (NTS): Profiling and disposition of newly generated and classified and fissile low-level waste (LLW), if required or applicable.</li><li>• EnergySolutions: Profiling, treatment, and disposition of mixed and LLW, if required or applicable.</li><li>• TSCA Incinerator, if required or applicable.</li><li>• Commercial treatment, storage, and disposal facility: For treatment and disposal of non radioactive hazardous waste, if required or applicable.</li><li>• Stakeholders</li><li>• Citizens Advisory Board and supporting contractor Edward Holmes Incorporated.</li><li>• DOE Integrated Safety Management System (ISMS) Verification Team</li><li>• Other nonregulatory key interfaces</li></ul>		
<b>Time Sequencing With Other Work</b> <ul style="list-style-type: none"><li>• These elements continue through the duration of the contract.</li><li>• No predecessor/successor relationships within the scope of the existing contract.</li><li>• No regulatory milestones are associated with this WBS element within the contract period [Federal Facility Agreement (FFA), Agreed Orders, and Site Treatment Plan (STP)].</li><li>• Work will be sequenced to prevent interference with remediation efforts.</li></ul>		
<b><u>SCOPE DESCRIPTION</u></b> <ul style="list-style-type: none"><li>• Perform Surveillance &amp; Maintenance activities for various facilities through the end of the contract. This will include, but is not limited to, routine inspections, corrective maintenance, minor facility repairs, combustible removal, gross vacuuming, maintenance vacuuming, cleanup of spills/leaks, control of loose contamination and airborne particles, isolation of utilities. The facilities were grouped as follows:<ul style="list-style-type: none"><li>○ C-340 S&amp;M</li><li>○ Other Facilities S&amp;M</li><li>○ Vehicle Maintenance</li><li>○ S&amp;M of remaining site facilities involves facilities not identified in the contract</li><li>○ Facility Inspections</li></ul></li><li>• Perform inspections of the facilities and identify health, safety, and environmental concerns.</li><li>• Perform routine health physics surveys of facilities and provide support to personnel for facility access, including access to contamination areas for mowing or other maintenance.</li><li>• Engineering support for corrective maintenance activities that include drawings, generation of scope of work, Activity Hazard Assessment's, procedures and supervision for maintenance repairs to DOE facilities.</li><li>• Typical activities that may be performed as part of S&amp;M, based on building conditions and available resources, include the following:<ul style="list-style-type: none"><li>○ Corrective maintenance;</li></ul></li></ul>		

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<ul style="list-style-type: none"><li>o Preventative maintenance;</li><li>o Combustible removal;</li><li>o Gross vacuuming;</li><li>o Maintenance vacuuming;</li><li>o Decontamination as required (eg., spills, leaks, etc.);</li><li>o Apply fixative to surfaces, as required, to control loose contamination and airborne particulates;</li><li>o Initial isolation of below and above grade utilities and process systems;</li><li>o Drain, purge, and flush systems posing a health and safety concern to workers;</li><li>o Repair and modify access doors, as required;</li><li>o Provide construction power, temporary lighting and ground-fault interrupter (GFI)-protected portable power panels;</li><li>o Repair and seal exterior wall penetrations;</li><li>o Drain and sample lubricants from equipment; and</li><li>o Disposition newly discovered waste.</li><li>• Vehicle maintenance will include oil changes, replacement of tire, repairs of vehicles, as required.</li><li>• If Additional S&amp;M is required for DMSAs due to delay in the closure acceptance, the work will be performed with existing personnel and little to no additional cost will be incurred.</li></ul>		
<b>WBS 04.11.10.05.01 Outyear Surveillance &amp; Maintenance Subproject Management</b> Provide overall management activities associated with this subproject. Activities performed under this subelement include the following: <ul style="list-style-type: none"><li>• Perform technical, contractual and project functions necessary to effectively manage and report scope, schedule, and budget.</li><li>• Maintain all activities within the defined safety, environmental, and quality requirements.</li><li>• Perform technical and personnel management functions.</li><li>• Maintain technically qualified and properly trained personnel.</li><li>• Develop, evaluate, and report project performance metrics.</li><li>• Interface with DOE, KY, EPA, other prime contractors, and stakeholders, as needed.</li><li>• The method(s) used for determining earned value for this WBS element is Level of Effort.</li></ul>		
<b>WBS 04.11.10.05.02 Outyear C-340 Surveillance &amp; Maintenance</b> <ul style="list-style-type: none"><li>• Perform S&amp;M activities for the C-340 Complex that include, but are not limited to, routine inspections, corrective maintenance, rodent and pest control, minor facility repairs, combustible removal, gross vacuuming, maintenance vacuuming, cleanup of spills/leaks, control of loose contamination and airborne particles, and isolation of utilities.</li><li>• The method(s) used for determining earned value for this WBS element is Level of Effort.</li></ul>		
<b>WBS 04.11.10.05.03 Outyear Other Facilities Surveillance &amp; Maintenance</b> <ul style="list-style-type: none"><li>• Perform S&amp;M activities for the other site facilities (included in contract and other remaining facilities) that include, but are not limited to, routine inspections, corrective maintenance, rodent and pest control, minor facility repairs, combustible removal, gross vacuuming, maintenance vacuuming, cleanup of spills/leaks, control of loose contamination and airborne particles, isolation of utilities.</li><li>• Develop and implement a plan to reduce the cost, while maintaining performance of S&amp;M for the other site facilities.</li><li>• The method(s) used for determining earned value for this WBS element is Level of Effort.</li></ul>		

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<b>WBS 04.11.10.05.04 Outyear Vehicle Maintenance</b> <ul style="list-style-type: none"><li>• Perform scheduled maintenance of vehicles including oil changes, tire replacement, and standard servicing.</li><li>• Perform required repairs to vehicles when equipment fails.</li><li>• The method(s) used for determining earned value for this WBS element is Level of Effort.</li></ul>		
<b><u>DELIVERABLES</u></b> <ul style="list-style-type: none"><li>• Maintenance Implementation Plan – 60 days after contract award</li><li>• Facility S&amp;M Reports</li><li>• S&amp;M Inspection Summary – quarterly</li></ul>		
<b>WBS 04.11.10.05.01 Outyear Surveillance &amp; Maintenance Subproject Management</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• None</li></ul> <u>Element Deliverables:</u> <ul style="list-style-type: none"><li>• Paducah Contractor Quality Assurance (QA) Project Plan</li><li>• Paducah Contractor environment, safety, and health (ES&amp;H) Plan</li><li>• Provide input to the following reports and submittals (if applicable):<ul style="list-style-type: none"><li>○ Monthly Project Performance Report (PPR)</li><li>○ Risk Management Plan Updates</li><li>○ Site Management Plan (SMP)</li><li>○ Semiannual Critical Analysis Report</li><li>○ Presentations</li><li>○ FFA briefings</li><li>○ Labor Standards Determinations</li><li>○ Gold Chart Performance Metrics</li><li>○ Annual updates to Site Treatment Plan</li><li>○ Annual Compliance Agreement Report</li><li>○ Annual ISMS Update</li><li>○ Annual Work Smart Standards Update</li><li>○ Financial Reporting, Management Analysis Reporting System</li><li>○ Annual Statement of Costs Incurred and Claimed</li><li>○ FFA Semiannual Progress Report</li><li>○ Remedial Action/Regulatory Commitment Tracking Report</li><li>○ Other reports/documents, as necessary</li></ul></li></ul>		
<b>WBS 04.11.10.05.02 Outyear C-340 Surveillance &amp; Maintenance</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• None</li></ul> <u>Element Deliverables:</u> <ul style="list-style-type: none"><li>• None</li></ul>		
<b>WBS 04.11.10.05.03 Outyear Other Facilities Surveillance &amp; Maintenance</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• None</li></ul>		

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Element Deliverables:

- None

**WBS 04.11.10.05.04 Outyear Vehicle Maintenance**

Element Milestones:

- None

Element Deliverables:

- None

**REQUIREMENTS**

- CERCLA/National Contingency Plan
- KY Hazardous Waste Permit (KY8-890-008-982)
- FFA for PGDP
- SMP for PGDP (annual revisions)
- Applicable state and federal laws and regulations (applicable or relevant and appropriate requirements)
- Contractor ISMS
- UEO-1066, as updated - Lease Agreement between DOE and USEC, Revision 4, dated October 30, 2001
- Enclosure to GDP 95-0018, as updated - USEC and DOE Resolution of Shared Site Issues, Revision 1, dated March 30, 1998
- Applicable Contractor plans, policies and procedures.
- Waste Acceptance Criteria for all applicable treatment and disposal facilities that were in effect on April 24, 2006.
- Applicable DOE Orders
- Applicable Federal Acquisition Regulations

It is the core value of the Contractor that the safety and health of every worker, the public at large, and our environment are the most important assets that we are entrusted to protect. To accomplish this, an ISMS, based on DOE's ISMS, has been implemented that incorporates the five core functions and is based on the seven guiding principles. The objective of ISMS is to systematically integrate safety and environmental protection into the planning and execution of all work activities. The term safety encompasses Nuclear Safety, Industrial Safety, Industrial Hygiene, Occupational Health, Health Physics, and environmental issues. ISMS requirements flow-down to Contractor subcontractors. The five core functions are (1) define the scope of work, (2) analyze hazards, (3) develop and implement hazard controls, (4) perform work within controls, and (5) provide feedback and continuous improvement. The seven guiding principles are (1) line management responsibility for safety, (2) clear roles and responsibilities, (3) competence commensurate with responsibility, (4) balanced priorities, (5) identification of safety standards and requirements, (6) hazard control tailored to work being performed, and (7) operations authorization.

Before a subproject begins, several activities must be completed that demonstrate that all involved in the project have completed rigorous health and safety reviews and that all potential hazards of doing the work have been identified. The routine activities in remedial actions are conducted in accordance with standard operating procedures, activity hazard analyses, and Integrated Safety Management plans. Nonroutine work will require a readiness assessment, as necessary, to ensure complete health, safety, and environmental reviews prior to work start. This assessment is conducted by people experienced in similar kinds of work with the right to examine all aspects of a project about to

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commence and requires that the project team provide documented evidence that any applicable requirements of the job have been met.

**SCOPE ASSUMPTIONS**

- Major maintenance, such as roof replacement, will not be necessary for the facilities.
- S&M will clean up minor spills, etc., and will package the incidental volume (10 drums per year) of waste material for transfer to the Material Disposition projects for ultimate disposition with other large volume waste streams.
- Maintenance of all radiological control equipment is included in WBS 1.9.1.
- Criticality Accident Alarm System is not required.
- The C-340 Complex is a radiological facility.

**COMPLETION CRITERIA**

- S&M is complete when facilities are no longer included in the property list.
- Facilities will be maintained in a condition that will allow occupancy/use.

**RISK MANAGEMENT**

See Risk Management Plan for analysis.

Risk was mitigated through the following efforts:

- Safety and environmental requirements will be integrated into work processes to mitigate NOVs and stop work orders due to safety or security concerns.
- Facility deterioration and/or structural instability will be mitigated by repairs to roof leaks and structural supports, as required.
- Potential environmental releases will be mitigated by control of leaks, barriers, and cleanup of spills.
- Increased maintenance demands will be mitigated through a preventative maintenance program, inspections and identification of trends.
- Changed conditions in facilities resulting in changes to safety basis documents will be mitigated by an evaluation of the risk as part of the quantitative risk analysis.

**CERCLA AREAS AND SWMU**

None

**BASIS OF ESTIMATE**

**1. Summary of Site Conditions**  
Perform S&M activities through the end of the contract

**a. Summary**

- **WBS 04.11.10.05.02 Outyear C-340 S&M**  
The C-340 Complex was previously used to convert uranium oxides to uranium metal. It has been shut down and placed in the DOE D&D program. The complex has been undergoing routine S&M activities awaiting D&D. The C-340 Complex is classified as a radiological facility.  
The C-340 Complex consists of the following facilities:
  - C-340-A Powder Building
  - C-340-B Metals Building
  - C-340-C Slag Building

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- C-340-D Magnesium Storage Building
- C-340-E Emergency Power for Critical Alarms

• **WBS 04.11.10.05.03 Outyear Other Facilities S&M**

The other site facilities are classified into two groups; Group 1 facilities support the mission of the contractor to complete the requirements of the contract. Group 2 facilities previously were used to support the mission of enriching uranium at the PGDP. The Group 2 facilities have been undergoing S&M activities while awaiting final disposition. The S&M of contract facilities includes the buildings, trailers, pads, outdoor items, as listed below:

Facility Number	Facility Number	Facility Number	Facility Number
C-200	C-412-T10	C-720 Degreaser	C-755-T01
C-218	C-412-T11	C-730-T01	C-755-T02
C-342	C-412-T12	C-730-T06	C-755-T03
C-342-A	C-412-T13	C-743-T01	C-755-T04
C-342-B	C-412-T14	C-743-T02	C-755-T06
C-402	C-416	C-743-T03	C-755-T07
C-403	C-416-T01	C-743-T04	C-755-T13
C-405	C-417	C-743-T07	C-755-T14
C-410-B	C-611-K	C-743-T09	C-755-T18
C-412-T02	C-611-M	C-745-A-SW	C-755-T19
C-412-T03	C-611-N	C-746-P-T01	C-755-T22
C-412-T04	C-612-T01	C-746-P-T02	C-755-T23
C-412-T05	C-612-T02	C-746-P-T03	C-755-T24
C-412-T06	C-612-T03	C-746-P-T04	C-755-T25
C-412-T07	C-616-E	C-746-R	C-770
C-412-T08	C-710 Tanks	C-755-B	
C-412-T09	C-720 underground pipe	C-755-D	

There are other facilities on-site that will require S&M. The S&M of these facilities will be covered by the responsible project.

The S&M of the following facilities was not identified in the contract.

- C-746-P-T05
- C-746-P-T06
- C-755-N
- C-755-T20

**b. Major Assumptions**

- Major maintenance, such as roof replacement, will not be necessary for the facilities.
- S&M will cleanup minor spills, etc., and will package the incidental volume of waste material for transfer to the Facilities Disposition D&D projects for ultimate disposition with other large volume waste streams.
- The facilities S&M records and inspections will be up to date.
- Condition Assessment Surveys (CAS) will be performed on an on-going basis, with no significantly different findings than those reported in the past.

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- Industrial hygiene characterization in C-340 is complete in order to support tours and inspections of the area.
- Design and project planning for utility and process line isolation for C-340 Complex is complete.
- Maintenance associated with Safety & Health concerns are not considered in the scope of this WBS.

**2. Estimating Methods**  
☐ Parametric    ☐ Bottoms Up    ☒ Other: Bottoms-Up/Parametric

**3. Sources of Estimating**

- Experience with S&M of similar uranium facilities at Fernald and Oak Ridge.
- S&M labor effort is based on the prior year costs.
- Materials and supplies are estimated based on prior years costs.
- S&M Cost/Performance Plan will be developed using the benchmarks established by the infrastructure contractor, using best practices.

**4. Basis of Estimate (Unescalated Values)**  
See Detail Estimate

**WASTE VOLUMES**

See attached waste performance metrics, as applicable.

**PROJECT SCHEDULE**

See attached schedule.

**BASELINE BY YEAR**

See attached Baseline by Year Report.